

I CLAIM:

1. A microchannel for use for separating two or more substances present in a sample, said channel comprising a first substrate and a second substrate with printed component printed on at least one of said substrates in a shape to define a perimeter of said channel, said substrates being affixed to one another so that said component is sandwiched between said substrates and is in contact with both substrates.
2. A channel as claimed in Claim 1 wherein said printed component is in sealing contact with both substrates.
3. A channel as claimed in Claim 2 wherein there is no etching required and no pre forming of the substrates to include a channel during manufacture required.
4. A channel as claimed in Claim 1 wherein a first part of said component is printed on said first substrate and a second part of said component is printed on said second substrate, said parts of said component together forming a channel when said substrates are affixed to one another.
5. A channel as claimed in Claim 4 wherein said substrates are affixed to one another with said first part of said component on the first substrate is aligned with said second part of said component on said second substrate.
6. A channel as claimed in Claim 5 wherein said substrates are affixed to one another with the component on the first substrate in contact with the component on the second substrate.
7. A channel as claimed in Claim 1 wherein said component is printed on said first substrate, said second substrate being arranged to provide a cover for said channel.
8. A channel as claimed in any one of Claims 1, 4 or 7 wherein said component is one of the following materials: polymeric material, mineral

filled polymer, gel, glass forming substance or solid dissolved or suspended in solvent.

9. A channel as claimed in any one of Claims 1, 4 or 7 wherein said component is a mineral filled, thermosetting modified silicone coating.

10. A channel as claimed in any one of Claims 1, 4 or 7 wherein said substrates, or either of them, are one of transparent, translucent and opaque.

11. A channel as claimed in any one of Claims 1, 4 or 7 wherein said substrates, or either of them, are one of transparent, translucent and opaque and are formed from glass, quartz or plastic.

12. A channel as claimed in Claim 1 wherein said substrates are affixed to one another by epoxy.

13. A channel as claimed in Claim 12 wherein there is no epoxy located within the channel.

14. A channel as claimed in Claim 1 wherein said channel has side walls formed by the component that are parallel to one another.

15. A channel as claimed in Claim 14 wherein said side walls are straight.

16. A channel as claimed in Claim 1 wherein said channel has elongated side walls formed by said component that are tapered relative to one another.

17. A channel as claimed in Claim 1 wherein said substrates are polyethylene sheets.

18. A channel as claimed in Claim 6 wherein said component is printed with a thickness of least 50 micrometers.

19. A channel as claimed in any one of Claims 1, 4 or 7 wherein said perimeter of the channel has a width of approximately 100 micrometers.

20. A channel as claimed in Claim 7 wherein the component printed on the substrate has a thickness of approximately 100 micrometers.

21. A channel as claimed in any one of Claims 1, 4 or 7 wherein said component is conductive or non-conductive.

22. A channel as claimed in any one of Claims 1, 4 or 7 wherein said component is chemically and electrically inert.
23. A channel as claimed in any one of Claims 1, 4 or 7 wherein there are means to subject the channel to an electric field.
24. A channel as claimed in any one of Claims 1, 4 or 7 wherein said channel has two ends and there is one electrolyte vial directly connected to each end.
25. A channel as claimed in any one of Claims 1, 4 or 7 wherein said channel has an entrance located therein, said entrance being suitable to inject a sample into the channel for isoelectric focusing.
26. A channel as claimed in any one of Claims 1, 4 or 7 wherein said substrates are made from a material selected from the group of glass, acrylic, cellulose acetate butyrate and polyethylene.
27. A channel as claimed in any one of Claims 1, 4 or 7 wherein there are means to pass light through the entire channel to permit whole column imaging detection.
28. A channel as claimed in any one of Claims 1, 4 or 7 wherein the substrates are transparent and there are means to pass light through the entire channel to prevent whole column imaging detection.
29. A microchannel for use for separating two or more substances present in a sample, said channel comprising a first substrate with printed component printed on said first substrate in a shape to define a perimeter of said channel, there being no etching required.
30. A method of constructing a microchannel that is suitable for use for separating two or more substances present in a sample, said channel having a first substrate and a second substrate, said method comprising cleaning the substrates, printing a channel on at least one of said substrates using printing techniques depositing a printed component in the shape of a perimeter of a channel on said at least one of said substrates, curing said at least one of said substrates and affixing said substrates to one another with said component sandwiched between said substrates.

31. A method of constructing a microchannel as claimed in Claim 30 wherein said component is deposited by at least one of ink jet printing and screen printing.

32. A method of constructing a microchannel as claimed in Claim 31 including the step of using the channel to carry out isoelectric focusing.

33. A method of constructing a microchannel that is suitable for use for separating of two or more substances present in a sample, said channel having a first substrate and a cover for said substrate, said method comprising cleaning the substrate, printing a channel on said substrate using printing techniques for depositing a printed component in the shape of a perimeter of said channel on said first substrate and curing said first substrate, affixing said cover to said substrate with said channel sandwiched between said first substrate and said cover.

34. A method of constructing a microchannel that is suitable for use for separating two or more substances present in a sample, said channel having a first substrate, said method comprising cleaning said first substrate, printing a channel on said first substrate using printing techniques by depositing a printed component in the shape of a perimeter of a channel on said first substrate and curing said first substrate.